

CLASS 124, MECHANICAL GUNS AND PROJECTORS**SECTION I - CLASS DEFINITION**

This class includes the various forms of projectile-throwing or impelling apparatus in which the propelling agent is nonexplosive. The apparatus must carry or hold the projectile so that it may be used for aerial projection. This class also includes devices which actually expel the projectile, but have the projectile tethered to the projector to prevent loss of the projectile; and some devices having the structure of projectors, but having means at the end of a barrel to prevent actual expulsion of the projectile.

The Search notes below reference one of the following three subject matter areas:

(1) PROJECTORS**(2) TARGETS****(3) PROJECTILES**

The specific subject matter area is noted parenthetically at the end of each search note.

SECTION II - REFERENCES TO OTHER CLASSES**SEE OR SEARCH CLASS:**

- 42, Firearms, for projecting devices using explosive charges to provide the projecting force. (Projectors)
- 43, Fishing, Trapping, and Vermin Destroying, subclass 135 for a combination with the swatting element for swatting insects, in which a swatting element is projected by spring means. (Projectors)
- 43, Fishing, Trapping, and Vermin Destroying, subclass 6, for harpoons and spears. (Projectiles)
- 86, Ammunition and Explosive-Charge Making, subclass 51, for ordnance-type, projectile making.
- 89, Ordnance, for projecting devices using explosive charges to provide the projecting force. (Projectors)
- 102, Ammunition and Explosives, subclasses 501+ for a projectile explosively fired from a gun; and particularly subclass 529 for a gun barrel cleaning projectile. (Projectiles)

- 114, Ships, subclasses 238+ for launching devices for self-propelled torpedoes. (Projectors)
- 119, Animal Husbandry, subclass 427 for devices for holding and releasing live objects to be used as targets. (Targets)
- 173, Tool Driving or Impacting, appropriate subclass for a means for driving or impacting a tool or the like, and particularly subclasses 90+ and see the search notes therein for an impacting device. (Projectors)
- 175, Boring or Penetrating the Earth, appropriate subclass for a projectile for boring or penetrating the earth, which may be combined with a projector therefor. (Projectiles)
- 209, Classifying, Separating, and Assorting Solids, subclass 642 for devices and methods of throwing and projecting articles through space and for separately collecting the articles which take different paths. (Projectors)
- 221, Article Dispensing, appropriate subclasses for article dispensers not otherwise provided for, and see particularly subclasses 208+ for article dispensers having a source of supply and a discharge assistant means to remove articles therefrom, and subclass 24 for article dispensers in forms simulating objects, including fire-arms. (Projectors)
- 222, Dispensing, subclass 79 for devices simulating firearms or other projectors which project a stream of liquid. (Projectors)
- 241, Solid Material Comminution or Disintegration, subclasses 5, 39+, 274, and 275 for devices for projecting material to effect the comminution thereof. (Projectors)
- 244, Aeronautics and Astronautics, subclass 63 for aircraft launching devices. (Projectors)
- 258, Railway Mail Delivery, subclasses 5+ for devices combined with a vehicle or devices peculiarly adapted for throwing or projecting a mailbag or the like to or from a moving vehicle. (Projectors)
- 273, Amusement Devices: Games, subclasses 108+ for an implement or device (either, per se, or in combination with other game apparatus) for projecting a game projectile during play of a surface projectile game so that it travels upon a surface at all times in its course of travel, and subclasses 317+ for an implement or device combined with other game apparatus for projecting a game projectile into the air during play of an aerial projectile game. (Projectors)
- 273, Amusement Devices: Games, subclasses 108+ for a target (either per se or combined with any other game apparatus) which is used to play a

- surface projectile game and subclasses 317+ (either per se or combined with any other game apparatus) which is used to play an aerial projectile game. (Targets)
- 273, Amusement Devices: Games, subclasses 108+ for a game projectile combined with any other game apparatus for playing a surface projectile game, subclasses 317+ for a game projectile combined with any other game apparatus for playing an aerial projectile game, and particularly subclasses 362+ thereunder for a target which also acts as a projectile by virtue of its being projected into the air (e.g., a clay pigeon which is projected into the air by a target-throwing trap). (Projectiles)
- 362, Illumination, subclass 112 for light projectors combined with or simulating firearms. (Projectors)
- 446, Amusement Devices: Toys, for a toy combined with a with a projector, particularly subclass 11 for a toy money box; subclass 45 for an autogyro; subclasses 63+ for a glider; subclass 308 for a figure toy; subclass 399 for a detonating projector and subclasses 429+ for a toy vehicle launcher. (Projectors)
- 473, Games Using Tangible Projectile, for a device or implement for impelling, launching, or otherwise projecting a game projectile in which the following applies: (Projectors)
- (a) Any projector device or implement which is combined with any other game device or apparatus so as to constitute a game or sport.
 - (b) (b) A striking type of projector device or implement, per se, which is used for a game or sporting purpose (such as a club, bat, racket, paddle, mallet, stick, etc.) and which is carried by (e.g., handheld) and manually manipulated by a user to strike and thereby project a game projectile such that substantially all of the force used to project the projectile is supplied by the user.
 - (c) (c) A combined projector-catcher device, per se, which is used for a game or sporting purpose to fling or throw a projectile into the air, and to also catch a game projectile already moving through the air after it has been projected.
 - (d) (d) Any projector device or implement, per se (other than one which is operated by explosive means) which is used for a game or sporting purpose and which is specifically adapted and intended to project a game projectile so that it travels upon a playing surface substantially at all times (i.e., the projectile is in contact with and moving over the playing surface either upon or immediately after projection).
- 473, Games Using Tangible Projectile, for a target (either per se or combined with any other game apparatus) which is used to play a game which uses a tangible projectile. (Targets)
- 473, Games Using Tangible Projectile, for a tangible game projectile (either per se or combined with any other game apparatus) used in the play of a game or sport. (Projectiles)
- 505, Superconductor Technology: Apparatus, Material, Process, subclasses 150+ for high temperature (T_c greater than 30 K) superconducting systems or devices, particularly subclass 164 for projectile or launching device or system. (Projectors)
- 505, Superconductor Technology: Apparatus, Material, Process, subclasses 150+ for high temperature (T_c greater than 30 K) superconducting systems or devices, particularly subclass 164 for projectile or launching device or system. (Targets)
- D22, Arms, Pyrotechnics, Hunting and Fishing Equipment, subclasses 103+ for ornamental designs for firearms. (Projectors)
- D22, Arms, Pyrotechnics, Hunting and Fishing Equipment, subclasses 113+ for designs for targets. (Targets)

SUBCLASSES

1

MISCELLANEOUS:

This subclass is indented under the class definition. Device not classifiable above.

- (1) Note. This subclass includes means for imparting rapid rotation to a propellor-like object which propels itself through the air because of its shape and rotation, or a device wherein gravity or a weight facilitates the launching of a missile.

2

COMBINED WITH CAP EXPLODER:

This subclass is indented under the class definition. Devices having combined therewith means for exploding a cap or other explosive noise making device.

SEE OR SEARCH CLASS:

- 42, Firearms, subclasses 54+ for devices made to imitate firearms which explode a cap, but do not expel a projectile.
- 446, Amusement Devices: Toys, subclasses 397+ for a device which explodes a cap, but does not simulate a firearm; especially subclass 399 for a device in which the explosion of a cap projects an element for the detonator.

3 ELECTROMAGNETIC:

This subclass is indented under the class definition. Devices for projecting missiles through the air by means of electromagnetic impulses applied to the projectile during its progress through the barrel of the projecting device.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 54, for apparatus wherein an electrically-actuated striker causes a projectile to be impelled.

SEE OR SEARCH CLASS:

- 310, Electrical Generator or Motor Structure, subclasses 12+ for linear electric motors, per se, though disclosed for electromagnetic guns.
- 318, Electricity: Motive Power Systems, subclass 38 for plural linear movement electric motor systems and subclass 135 for linear movement electric motor systems.

4 CENTRIFUGAL:

This subclass is indented under the class definition. Devices for projecting missiles through the air by means of a centrifugal or swinging movement, as distinguished from a straight line impulsion.

SEE OR SEARCH CLASS:

- 239, Fluid Sprinkling, Spraying, and Diffusing, subclasses 7, 650+, appropriate subclasses, 214+ and 380+ for methods and apparatus for scattering fluent material by centrifugal force.

- 241, Solid Material Comminution or Disintegration, subclass 275, for comminutors embodying centrifugal projecting means for the material.

5**Hand:**

This subclass is indented under subclass 4. Devices, which are held in the hand and caused to throw a missile by a swinging movement of the human arm. They may be assisted by a spring or flexible element in the throwing device but this must merely add to the effect of the throwing action of the human arm.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 7+, for devices wherein the spring is the primary projecting means, even though the device is held in the hand.

SEE OR SEARCH CLASS:

- 102, Ammunition and Explosives, subclasses 358+ for pyrotechnic devices combined with throwing devices, and subclass 486 for grenades combined with a handle, hand-grip or strand to assist throwing.
- 473, Games Using Tangible Projectile, subclasses 505+ for a player held or attached implement for both projecting (often by a centrifugal flinging movement of a player's arm) a projectile into the air and catching a projectile already moving through the air (e.g., a lacrosse stick, etc.), and subclass 615 for a player held or worn means for enhancing subsequent movement of a projectile that is thrown or otherwise projected by the player (e.g., a handheld or handworn means to assist a player to pitch a baseball that will have an enhanced curve during flight thereof, etc.).

6**Mechanical:**

This subclass is indented under subclass 4. Devices, in which the throwing movement is produced by mechanical means. Includes devices for mechanically pitching a baseball.

SEE OR SEARCH CLASS:

- 473, Games Using Tangible Projectile, subclass 421 for a batting backstop or cage (used in a playing field or court

- game or used to practice or train therefor) which may be combined with a projector which uses a centrifugal throwing movement to mechanically pitch a ball, and subclasses 422+ for a device (used to practice or train for the playing of a playing field or court game) which may be combined with a projector which uses a centrifugal throwing movement to mechanically pitch a ball.
- 7 Spring:**
This subclass is indented under subclass 6. Devices in which the mechanical throwing device is actuated by a spring. Includes devices for mechanically pitching a baseball.
- SEE OR SEARCH CLASS:
16, Miscellaneous Hardware, subclasses 72+ for closing devices using springs of a similar nature.
- 8 Rotating about vertical axis:**
This subclass is indented under subclass 7. Devices in which a mechanical throwing arm is rotated about a vertical axis by means of a spring, usually clay target throwing devices.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
43, for the clips or holders for clay targets on the throwing arm.
- SEE OR SEARCH CLASS:
273, Amusement Devices: Games, subclasses 362+ for the clay targets, per se.
D22, Arms, Pyrotechnics, Hunting and Fishing Equipment, subclasses 113+ for designs for targets.
- 9 Automatically varied throwing angle:**
This subclass is indented under subclass 8. Devices, in which the angle at which the projectile is thrown is varied automatically, usually for the purpose of introducing an element of uncertainty.
- 10 PINCH:**
This subclass is indented under the class definition. Devices in which a pinching or squeezing force is applied, usually to curved surfaces of a projectile.
- 16 SPRING:**
This subclass is indented under the class definition. Devices in which the impelling force is the action of a spring applied either directly or through a plunger or similar means to the projectile. Includes devices impelled by a spring for sliding projectiles off a smooth plate.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
66+, for projecting devices in which a spring drives a plunger which creates a quantity of compressed air, in which the air is the impelling agent for the projectile.
- SEE OR SEARCH CLASS:
267, Spring Devices, especially subclasses 69, 70, and 71 for spring devices of general application.
- 17 Elastic band:**
This subclass is indented under subclass 16. Devices in which the impelling spring is a band or strip of elastic material, usually rubber.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
35, for trigger and releasing mechanism for this type of projector in which the elastic band drives the projectile directly.
37+, for devices in which the elastic band drives a plunger which in turn drives the projectile.
- 18 Self-projected band:**
This subclass is indented under subclass 17. Devices, in which the elastic propelling spring is also itself the projectile.
- 19 Repeating:**
This subclass is indented under subclass 18. Devices, having provision for releasing a plurality of self-projected elastic bands in succession.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
72, for a repeating projector using fluid pressure.

20.1 Having handle (e.g., crotch type slingshot):
This subclass is indented under subclass 17. Device including an elastic projector attached to the end of an extension from a handle and so arranged as to be capable of propelling a projectile through space.

- (1) Note. This subclass also includes handles having multiple elastic projects which are separately attached to ends of a bifurcated extension, e.g., a common slingshot.

20.2 Magazine handle:
This subclass is indented under subclass 20.1. Device in which the portion of the device adapted for being grasped has means for storing additional projectiles.

20.3 Arrow or dart projector:
This subclass is indented under subclass 20.1. Handle having an elastic band specifically adapted to project an elongated member having a tipped end and a fletched end adapted for stabilizing its flight.

21 Guided projectile:
This subclass is indented under subclass 17. Devices, in which the starting path of the missile is directed through a tubular barrel or along a grooved track or the equivalent thereof.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
26+, for similar devices using springs other than elastic bands as the projecting force.

22 Dart or arrow projector:
This subclass is indented under subclass 21. Devices, in which the structure is peculiarly adapted to the projection by elastic bands of long-shafted projectiles, such as darts or arrows.

SEE OR SEARCH THIS CLASS, SUB-CLASS:
23.1+, for bows and the like.
26+, for projectors similar to those in this subclass, but using springs other than elastic bands.

23.1 Bow:
This subclass is indented under subclass 16. Device in which the straightening of a bowed elongated spring provides the projecting force.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 35.1, for a trigger or releasing mechanism for a bowstring.
86+, for an archery projector element.

24.1 Having projectile guide:
This subclass is indented under subclass 23.1. Device, having some means for directing the initial path of a projectile along a desired trajectory.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 22, for similar devices using the contracting force of an elastic member as the propelling force for a dart or arrow.

25 Crossbow:
This subclass is indented under subclass 24. Devices, in which the guide for the projectile is an elongated member at right angles to the bow spring. These are the devices commonly known as crossbows.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 21+, for similar devices, having two rigid cross arms, with the propelling force provided by elastic bands.
26, for similar devices in which the propelling force is provided by other types of springs.

25.5 Having projectile supply:
This subclass is indented under subclass 24.1. A bow having a projectile guide, having support means for holding one or more quarrels in ready reserve, e.g., a quiver.

- (1) Note. The quarrels in the ready reserve are in addition to and separate from any such projectile being held in or on the bow in a state of readiness.
(2) Note. The term quarrel, as used herein, includes, but is not limited to including such terms as bolt, shaft, arrow, and dart.

25.6 Compound bow:

This subclass is indented under subclass 23.1. Apparatus in which the bow has either (1) a fixed or variable mechanical advantage means for decreasing the force required to hold the bow at full draw, or (2) means for accelerating the projectile during launch at an increasing rate.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

900, for specific pulley structure.

25.7 Having projectile supply:

This subclass is indented under subclass 23.1. A bow, having support means for holding one or more arrows in ready reserve, e.g., a quiver.

(1) Note. The arrows in the ready reserve are in addition to and separate from any such projectile being held in or on the bow in a state of readiness.

(2) Note. The term arrow, as used herein, includes, but is not limited to including such terms as bolt, shaft, quarrel, and dart.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

25.5, for the combination of a projectile guide and a quiver.

26 Guided projectile:

This subclass is indented under subclass 16. Devices, in which the starting path of the projectile is directed along a desired path, usually by means of a tubular barrel or grooved track or the equivalent thereof. This includes devices in which the projectile travels along an internal guide.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

37+, for the trigger and releasing mechanism for this type of projector.

45+, for the magazine structure for these projectors.

27 Gun type:

This subclass is indented under subclass 26. Devices, having the appearance of a firearm or piece of ordnance, and having an actual barrel

for guiding the projectile and a trigger for releasing the projectile.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

2, for similar devices, which explode a cap, as well as expel a projectile.

SEE OR SEARCH CLASS:

273, Amusement Devices: Games, sub-classes 348+, particularly subclasses 355+, 357, and 405 for projectors of this type combined in a shooting gallery, or with target structure.

28 Converted firearm:

This subclass is indented under subclass 27. Devices, in which an actual firearm or piece of ordnance is converted into a spring projector by the use of some temporary converting structure. Includes the converting structure, per se. In many cases the projecting structure acts only to expel means to mark a target adjacent the muzzle of the firearm or piece of ordnance, and the marking device is not intended to completely leave the projector.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

58, for an adapter for converting a firearm into a fluid-pressure gun.

SEE OR SEARCH CLASS:

434, Education and Demonstration, sub-classes 11+ for devices for teaching the handling of firearms, in which no projection of a missile or marking device takes place.

29 Mounted:

This subclass is indented under subclass 27. Devices, which are supported or mounted on some fixed or movable structure, as distinguished from devices to be carried in the hand or supported by the human body.

SEE OR SEARCH CLASS:

42, Firearms, subclass 55 for toy cannons, used only for firing caps, but having similar mounting means.

89, Ordnance, for mounting or supporting means for actual pieces of ordnance.

31 Trigger or releasing mechanism:

This subclass is indented under subclass 80. Devices for releasing the force which impels or throws the projectile.

- (1) Note. Trigger mechanisms limited to their application to a specific type of projector have not been cross referenced here, and should be searched with the type of projector to which they are limited. For example, trigger mechanism for air pressure projectors, such as those in this class, subclasses 11+ consisting usually of valve operating means, has not been cross referenced here unless obviously capable of more general application.

SEE OR SEARCH THIS CLASS, SUBCLASS:

41+, for devices to release the projectile itself from its holding or carrying means.

SEE OR SEARCH CLASS:

74, Machines Element or Mechanism, subclass 2, for tripping mechanism in general.

32 Electrical:

This subclass is indented under subclass 31. Devices, in which some electrical device is used.

- (1) Note. For electric firing devices for firearms and ordnance, see Class 42, Firearms, subclass 84, and Class 89, Ordnance, subclasses 28.05+.

SEE OR SEARCH THIS CLASS, SUBCLASS:

77, for an electrically actuated valve in a fluid pressure projector.

33 Chance operated:

This subclass is indented under subclass 31. Devices, in which an element of chance is introduced, usually to make the time at which the release takes place uncertain or unpredictable.

34 Remote:

This subclass is indented under subclass 31. Devices for releasing the propelling force from a location remote from the actual projector.

35.1 Cord or band:

This subclass is indented under subclass 31. Trigger or release mechanism, particularly adapted to release a flexible cord or elastic band from a stressed state to either transfer or provide the force to impel a projectile.

SEE OR SEARCH THIS CLASS, SUBCLASS:

19, for the release of a series or succession of elastic bands which propel themselves through the air.

35.2 Bow lock or archery trigger for compound or long bow:

This subclass is indented under subclass 35.1. Device, wherein the release means is particularly adapted to be grasped by an archer and to permit a smooth, controlled, repeatable mechanized release of the bow string when shooting an arrow.

36 Swinging arm release:

This subclass is indented under subclass 31. Devices for releasing a swinging arm which throws or impels a projectile.

37 Plunger release:

This subclass is indented under subclass 31. Devices and mechanism, for releasing a plunger which is driven by a spring or other means to impel a projectile.

38 Variable force:

This subclass is indented under subclass 37. Devices in which the force with which the plunger moves may be varied. For example, the releasing mechanism may be caused to operate upon a different point or notch on the plunger.

39 Continuous firing:

This subclass is indented under subclass 37. Devices for projecting a succession of missiles, as long as the mechanism is operated or until the supply in the projector is exhausted. Usually a resetting of the impelling plunger is alternated with the release.

- 40 Safety lock:**
This subclass is indented under subclass 31. Devices for preventing the premature discharge or impelling of the projectile.
- SEE OR SEARCH CLASS:
42, Firearms, subclass 70 for safety locks on firearms.
- 41.1 Projectile holder or carrier:**
This subclass is indented under subclass 80. Apparatus specifically adapted for positioning or transporting a projectile in association with the projector while the combination is in a ready-to-fire state.
- (1) Note. A projectile holder or carrier may also include a trigger or lock in association therewith.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
25+, for crossbows, per se.
31+, for devices for releasing the projecting force.
- 42 Disk:**
This subclass is indented under subclass 41. Devices, particularly adapted to hold or carry projectiles of disk shape.
- 43 Disk target clip or carrier:**
This subclass is indented under subclass 42. Devices, where the projectiles are targets usually of clay or other easily frangible material. Includes devices to release the projectile at the desired point.
- 44 Boomerang:**
This subclass is indented under subclass 41. Devices, particularly adapted to carry or hold projectiles of shapes commonly known as boomerangs.
- 44.5 For a longbow or compound bow:**
This subclass is indented under subclass 41.1. Projectile holder or carrier, particularly adapted for holding or positioning the unlocked portion of an elongated projectile adjacent the projector prior to release of the projectile, e.g., an arrow rest.
- (1) Note. Crossbows are excluded from this subclass.
- 44.6 Magnetic restraint:**
This subclass is indented under subclass 41.1. Projectile holder or carrier, wherein a magnet is used to position or retain a projectile prior to firing.
- 44.7 Fluid overcomes restraining force:**
This subclass is indented under subclass 41.1. Projectile holder or carrier, wherein a pressurized fluid is used to overpower the positioning or retaining means and thereby fire the projectile.
- (1) Note. The pressurized fluid may be produced by actuating a plunger or it may be released from a pressure vessel.
- 45 Magazine:**
This subclass is indented under subclass 80. Devices for holding or carrying a supply of projectiles in or on the projecting devices, usually in such a way that they are fed automatically into position to be thrown or impelled. The relation of the magazine structure to such other parts of the projector as the projectile guiding barrel, may be set forth provided those other elements are recited or described only to show the arrangement or relationship of the magazine.
- SEE OR SEARCH CLASS:
42, Firearms, subclasses 49+ for magazines on firearms.
221, Article Dispensing, appropriate subclasses for article dispensing not otherwise provided for, and especially subclasses 208+ for such dispensers incorporating discharge assistant means. See the Notes to the definitions of Class 221 for the disposition of other related disclosure.
227, Elongated-Member-Driving Apparatus, subclasses 107+ for combined apparatus for positioning a member, e.g., a nail, in alignment with a driver, and for applying such member to work.

- 312, Supports: Cabinet Structure, subclasses 35+ for cabinet structure broadly, for holding articles of various types similar to projectiles.
- 46 Disk target:**
This subclass is indented under subclass 45. Devices, particularly adapted to hold or carry a supply of disk targets.
- 47 Gravity fed:**
This subclass is indented under subclass 46. Devices, in which the feeding of the projectiles to the projector takes place by the action of gravity.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
49, for gravity fed magazines in general.
- 48 Rotary:**
This subclass is indented under subclass 45. Devices, in which the magazine is rotated step by step, supplying a projectile at each step in its rotation.
- 49 Gravity fed:**
This subclass is indented under subclass 45. Devices, in which the feeding of the projectiles takes place by the action of gravity.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
47, for gravity fed magazines particularly adapted for use with disk targets.
- 50 Having cut-off:**
This subclass is indented under subclass 49. Devices, in which the continuous feeding of projectiles is prevented by some means which permits them to pass into position only at a certain desired period or position of the other parts of the projector. This cut-off must be something other than the driving or impelling member of the projector.
- 51.1 Mechanical projectile feed:**
This subclass is indented under subclass 45. Subject matter, in which a projectile is moved from a magazine to the ready-to-fire position by means of a chute, ramp, conveyor, linkage, or other mechanical means.
- SEE OR SEARCH CLASS:
42, Firearms, subclasses 49.01+ for magazines of similar nature for use with a firearm.
- 52 Spring:**
This subclass is indented under subclass 51.1. Devices, operated or driven by a spring.
- 53 Having cut-off:**
This subclass is indented under subclass 52. Devices, in which the continuous feeding of projectiles is prevented by some means which permits them to pass into position only at a certain desired period or position of the other parts of the projector. This cut-off must be something other than the driving or impelling member of the projector.
- 53.5 Fluid projectile feed:**
This subclass is indented under subclass 51.1. Subject matter, in which a projectile is moved from a magazine to the ready-to-fire position by hydraulic or pneumatic means.
- 54 ELECTRICALLY ACTUATED PROJECTILE STRIKER:**
This subclass is indented under the class definition. Apparatus wherein an object or missile is impelled by a member impacting said object or missile, which member derives its impacting force by electrical energy applied to said member.
- (1) Note. See the (1) Note under subclass 56 for discussion of "impel" and "propel".
- SEE OR SEARCH THIS CLASS, SUBCLASS:
3, for apparatus wherein electromagnetic impulses applied to the projectile itself causes the projectile to be propelled.
- 55 PROJECTOR FOR IMPELLING PUFF OF GAS ONLY:**
This subclass is indented under the class definition. Apparatus wherein no more than a blast or volume of gaseous material is impelled, said blast or volume having dimensions that are small relative to the distance to which the blast is impelled.

- (1) Note. The puff of gas (usually air) acts as a projectile that impacts against a target that moves to indicate that the puff has struck its target.
- (2) Note. This subclass provides for a projector that, as claimed in a patent to the projector, impels a burst of gaseous material or a burst of fluid material that is not further characterized as being clearly liquid or clearly gas. For a projector that impels a burst of liquid material, see the reference to Class 222 below.

SEE OR SEARCH CLASS:

- 222, Dispensing, subclass 79 for a water gun wherein a blast of liquid is impelled.

56 FLUID PRESSURE:

This subclass is indented under the class definition. Apparatus wherein an object or missile is propelled or impelled by energy applied thereto, which energy is exerted by way of a force tending to compress or expand the volume of a liquid or a gaseous material.

- (1) Note. As used in this and the subclasses indented hereunder (and also in those subclasses of this Classification Order which refer to this Note for a discussion of the terms), the terms “propel” and “impel”, have the following meanings and connotations. Both terms have a similar meaning of causing an object to move rapidly by exerting a force thereon. However, PROPEL has the connotation of exerting a sustained force on the object, whereas IMPEL has the connotation of exerting an impulse of force thereon.
- (2) Note. The pressurized fluid generated by the force described in the definition is usually a gas, such as air. The force defined may be that which compresses or tends to compress the fluid at the moment of use, or that which compresses the fluid for storage and subsequent use when the user of the apparatus causes a projectile to be launched. The source of pressurized fluid may also be a

cartridge containing gas under pressure, in which instance the force is that exerted by the expansion of the gas from a punctured cartridge.

SEE OR SEARCH CLASS:

- 89, Ordnance, subclass 7 for guns, in which the pressure of a gas is used to expel the projectile, in which the pressure is created by the explosion of a charge of vapor or other explosive mixture.
- 114, Ships, subclasses 238+ for pneumatic devices for launching self-propelled marine torpedoes.
- 227, Elongated-Member-Driving Apparatus, subclasses 9+ for a member, e.g., stud, driving device using an explosive force.
- 251, Valves and Valve Actuation, appropriate subclasses for specific valve structure.

57 Self-contained in projectile or projectile-carrying cartridge:

This subclass is indented under subclass 56. Apparatus wherein a missile is caused to move by discharge of fluid from a pressurized chamber, in which apparatus, either a) the missile holds the chamber therein for discharge of pressurized fluid therefrom as the missile is propelled, or b) the missile is held by the chamber and forms a seal to hold the pressurized fluid in the chamber until the moment of discharge, and at discharge the missile is impelled by the pressurized fluid from the chamber.

- (1) Note. See (1) Note of subclass 56 for discussion of “propel” and “impel”.
- (2) Note. The chamber of (a) above is not necessarily separable from the missile, but can comprise a volume integral with and contained within the missile, which volume is charged with compressed gas just before the moment that the missile is launched, after which the discharge of gas from the missile propels the missile.

58 Adapter for converting projector force or projectile:

This subclass is indented under subclass 56. Apparatus wherein significance is attributed to means whereby the apparatus may be changed,

a) from an apparatus using other than fluid-pressure energy to an apparatus using fluid-pressure energy, or b) from an apparatus projecting one type or size of missile to an apparatus projecting another type or size of missile.

- (1) Note. Apparatus described in (a) above is especially adapted for converting a firearm structure using explosive energy into projector structure using fluid-pressure energy. The claims in patents for such apparatus recite the firearm in terms of the environment that the adapter is to operate in rather than in terms of the firearm.

SEE OR SEARCH CLASS:

- 42, Firearms, appropriate subclasses for a projector using an explosive charge to provide the projecting force.

59 Having common supply to plural projector barrels:

This subclass is indented under subclass 56. Apparatus provided with two or more tubes, any of which tubes guides the launching of a missile while the missile is within the confines of the apparatus, and provided with means to connect the same source of pressurized fluid to any or all of the tubes selectively.

60 Provided by surge of pressure into evacuated projector barrel:

This subclass is indented under subclass 56. Apparatus wherein the energy to impel a missile is applied by removing from a chamber a quantity of gas, and the missile is subsequently released to be projected through and out of the chamber under the urging of ambient gas behind the missile suddenly filling the chamber.

61 Applied to intermediate projectile-engaging member:

This subclass is indented under subclass 56. Apparatus provided with a component located between the missile and a source of pressurized fluid, which component is pushed by the pressurized fluid into impacting contact with the missile, thereby to impel the missile.

62 Provided by user's mouth or lungs:

This subclass is indented under subclass 56. Apparatus wherein the source of pressurized fluid for impelling a missile is the respiratory system of a person using the apparatus.

- (1) Note. The apparatus is usually a tube that guides a missile for launching therefrom, into which tube the user exhales to produce the pressure that impels the missile.

63 Provided by movement of user-actuated, projector-mounted pressure member:

This subclass is indented under subclass 56. Apparatus provided with a component that is carried by the apparatus and is driven relative to the apparatus by an action of the user of such apparatus, wherein the driving of said component pressurizes the fluid that impels a missile.

- (1) Note. The user's action may be applied to the pressurizing component directly to cause a momentary pressure that is used immediately, or may be applied indirectly by an intermediate member that transmits the user's force into a pressurizing force. Moreover, the user's energy may be stored in a spring member that will subsequently drive the pressurizing component, or stored in a container of pressurized fluid.

64 To create surge of pressure:

This subclass is indented under subclass 63. Apparatus wherein the driving of said component generates a sudden rush of pressurized fluid that impels the missile as the component is driven.

65 By plunger moving within cylinder:

This subclass is indented under subclass 64. Apparatus wherein the component is a piston having a periphery substantially conforming to the interior surface of a tube, and the piston reciprocates inside of the tube to pressurize fluid within the tube.

- (1) Note. The cylinder in which pressure is created may be the barrel that guides the missile to be impelled or may be an auxiliary cylinder that confines the pressurized fluid for release into the barrel that guides the missile.

66 By spring-driven plunger:

This subclass is indented under subclass 65. Apparatus wherein the driving of said piston is caused by a resilient element.

- (1) Note. In this subclass the user's energy is usually stored in a spring (usually by compressing the spring) which is subsequently released to drive the piston that pressurizes the impelling fluid.

67 Within cylinder having diameter larger than projector barrel:

This subclass is indented under subclass 66. Apparatus wherein the piston reciprocates inside of a first tube and the missile is impelled from a second tube, and wherein the inside diametral dimension of said first tube is greater than the inside diametral dimension of said second tube, and wherein the tubes are connected for passage of fluid, whereby pressure generated in said first tube is used to impel the missile from said second tube.

- (1) Note. The first tube is the auxiliary cylinder referred to in (1) Note of subclass 65.

68 With recoil-absorbing mechanism:

This subclass is indented under subclass 67. Apparatus wherein the action force that drives the piston for pressurizing the fluid creates a reaction force, which apparatus is provided with means to consume or compensate for the reaction force.

69 To store pressure in valved container:

This subclass is indented under subclass 63. Apparatus wherein the driving of said component generates pressurized fluid that is held in a chamber, which chamber is provided with means for a) closing the chamber to hold pressurized fluid therein or b) opening the chamber to permit the pressurized fluid to be discharged or recharged.

70 With check valve permitting recharge, and control valve for discharge, of fluid pressure:

This subclass is indented under subclass 56. Apparatus provided with a chamber for containing the pressurized fluid, which chamber includes a check valve whereby pressurized

fluid admitted to the chamber, and also includes a control valve whereby pressurized fluid released from the chamber to impel a missile.

- (1) Note. The term "check valve" refers to a device in a conduit or passageway for fluid, which device permits the passage of fluid in one direction of fluid movement through the device, but does not permit the passage of fluid in the opposite direction of movement.

- (2) Note. The term "control valve" refers to a device in a conduit or passageway for fluid, which device may be closed to prevent the passage of fluid therethrough, or may be opened to a regulated degree to permit the passage of fluid therethrough to a degree of fluid flow limited only by the area of the opening.

71 With control for discharge of fluid pressure:

This subclass is indented under subclass 56. Apparatus provided with means for regulating the release of pressurized fluid from a chamber that contains said pressurized fluid, which means is triggered by a user of the apparatus.

- (1) Note. In this subclass the apparatus includes a gas cartridge with pressurized fluid therein, and means for puncturing the cartridge to release the fluid to impel the missile.

72 For continual projection of successive projectiles (e.g., for "rapid fire", etc.):

This subclass is indented under subclass 71. Apparatus wherein significance is attributed to a manner of operating the apparatus such that a single actuation of a control member causes a plurality of missiles to be launched in quick sequence.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 19, for repeated launching of elastic-band projectiles.

73 By valve means:

This subclass is indented under subclass 71. Apparatus wherein the regulating means is a control valve which may be opened to release pressurized fluid to impel a missile.

- (1) Note. See the (1) Note under subclass 70 for further discussion of the meaning of "control valve".
- 74 For discharge of pressure from removably mounted cartridge:**
This subclass is indented under subclass 73. Apparatus wherein a chamber that may be put into and taken out of the apparatus is the source of pressurized fluid, which apparatus is provided with a control valve coacting with said chamber containing pressurized fluid to regulate the release of fluid from the chamber.
- 75 Opened by fluid pressure-actuated means:**
This subclass is indented under subclass 73. Apparatus wherein the control valve includes a member, which member is triggered by a user to be moved by pressurized fluid to regulate release of pressurized fluid to impel a missile.
- 76 Opened by spring-actuated means:**
This subclass is indented under subclass 73. Apparatus wherein the control valve includes a member, which member is triggered by a user to be moved by a resilient element to regulate release of pressurized fluid to impel a missile.
- 77 Opened by electrically actuated means:**
This subclass is indented under subclass 73. Apparatus wherein the control valve includes a member, which member is triggered to be moved by electrical energy to regulate release of pressurized fluid to impel a missile.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
32, for an electrically-released trigger device.
- 78 PROJECTILE IMPELLED BY COACTING WHEELS:**
This subclass is indented under the class definition. Apparatus provided with two drums rotating on parallel axes in opposite rotational directions so that their adjacent peripheries are moving in the same direction, the drums being spaced apart so that their adjacent peripheries are separated by a distance substantially equal to or slightly less than a cross-sectional dimension of a missile that will pass between the drums, whereby as the missile passes between the drums in tangential relation thereto, the missile will be accelerated by contact with the peripheries of the rotating drums.
- 79 PROJECTILE IMPELLED BY USER-PROVIDED FORCE:**
This subclass is indented under the class definition. Apparatus provided with a member for impacting against a missile when the member is moved, which member is impacted by a user of the apparatus and transmits the motion of the user into motion of the member to impact against and impel the missile.
- 80 ELEMENT:**
This subclass is indented under the class definition. Device wherein significance is attributed to a particular portion of the structure or operating mechanism of a projectile-throwing or impelling apparatus.
- SEE OR SEARCH CLASS:
42, Firearms, appropriate subclasses for elements similar to those in this group, when used in connection with firearms.
89, Ordnance, appropriate subclasses for elements similar to those in this group when used in connection with ordnance.
- 81 Means for producing projectile spin or deflection:**
This subclass is indented under subclass 80. Device which imparts a rapid rotation to a missile about an axis that is substantially coincident with the line of movement of the missile, or which diverts a moving missile from one trajectory to a different trajectory as it is being impelled from a projectile-impelling apparatus.
- 82 Means for feeding projectile or ejecting cartridge:**
This subclass is indented under subclass 80. Device which moves a missile relative to a projector thereof before it is impelled therefrom, such movement being for the purpose of locating the missile in proper position to be impelled, or which removes from a projector the cartridge of a projectile-carrying cartridge after the launching of a missile from the cartridge.

- (1) Note. The term “projectile-carrying cartridge” is defined in part (b) of the definition of subclass 57 above.
- 83 Projector barrel:**
This subclass is indented under subclass 80. Device in which the particular portion is a tube on the projectile-impelling apparatus, which tube guides a missile during the short time that the missile is within the apparatus just before it is fully launched therefrom.
- 84 On convertible or adjustable projector:**
This subclass is indented under subclass 83. Device in which one tube can be exchanged for another tube, or in which a tube can be varied in dimension, whereby missiles of varying dimensions can be launched from a particular projectile-impelling apparatus, or in which a particular tube may be mounted on one form of stock (e.g., to simulate a hand gun) or mounted on another form of stock (e.g., to simulate a rifle).
- 85 With surrounding cylinder:**
This subclass is indented under subclass 83. Device in which the tube that guides the missile is enclosed along substantially its entire length by a second tube spaced radially from the guiding tube.
- 86 For archery projector:**
This subclass is indented under subclass 80. Device in which the particular portion is part of an apparatus wherein a user impels an arrow from a bow.
- (1) Note. For purposes of the subclasses indented hereunder, a “bow” is defined as a strip of elongated resilient material, usually curved or bent, having a “string” connecting the two ends of the strip. In use, the bow is grasped by a “handle” and a portion of the string is pulled away from the handle with an arrow between the string and the handle. A groove or “nock” in the rear end of the arrow is fitted to the string so that when the string is released energy which has been stored in the bow by pulling apart is released and the arrow is impelled.
- 87 Bow sight:**
This subclass is indented under subclass 86. Device in which the particular portion is a component that aids a user to properly aim an arrow towards its target.
- SEE OR SEARCH CLASS:
33, Geometrical Instruments, subclass 265 for a sighting means, per se.
- 88 Bow handle or attachment thereto:**
This subclass is indented under subclass 86. Device in which the particular portion is a bow handle, or a component fastened thereto.
- (1) Note. See (1) Note to subclass 86 for a discussion of the terms “bow” and “handle” in relation to other archery terms.
- 89 For stabilization thereof:**
This subclass is indented under subclass 88. Device in which the portion or component tends to prevent excess motion of the bow, especially during launching of an arrow therefrom.
- 90 Bow string or attachment thereto:**
This subclass is indented under subclass 86. Device in which the particular portion is a bow string, or a component fastened thereto.
- (1) Note. See (1) Note to subclass 86 for a discussion of the terms “bow” and “string” in relation to other archery terms.
- 91 Nock-point locator:**
This subclass is indented under subclass 90. Device in which the portion or component serves to position the nock of an arrow relative to its correct position on the strings to properly launch the arrow.
- (1) Note. See (1) Note to subclass 86 for a discussion of the terms “nock” and “string” in relation to other archery terms.
- 92 Silencer:**
This subclass is indented under subclass 90. Device in which the portion or component tends to reduce the noise that normally is

caused by vibration of a string after release thereof.

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**900 LIMB TIP ROTATABLE ELEMENT
STRUCTURE:**

Collection of documents disclosing reels, cams, eccentrics, pulleys, wheels, etc., which are mounted at or near an extreme end of a bow stave in such fashion as to be operatively associated with a means for increasing the shooter's mechanical advantage, e.g., the pulleys of a compound bow.

END